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Taxonomic note on two *Lyristes* cicadas (Hemiptera: Cicadidae) described by E. Schmidt from China

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Abstract: The identity of two *Lyristes* species described by Schmidt is readdressed based on examination of the type materials. *Lyristes wui* Schmidt, 1932 is recognized to be a junior synonym of *Salvazana mirabilis* Distant, 1913, and *Lyristes altaiensis* Schmidt, 1932 is a junior synonym of a North American species, *Neotibicen resh* (Haldeman, 1852). *Lyristes altaiensis* may have been erroneously recorded from China most possibly due to the mislabeling of the holotype.

Key words: new synonym; *Salvazana*; *Tibicen*; *Neotibicen*; identity; distribution

两种“蟟蝉”的分类修订（半翅目：蝉科）

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摘要：基于吴氏蟟蝉 *Lyristes wui* Schmidt, 1932 和阿尔泰蟟蝉 *Lyristes altaiensis* Schmidt, 1932 的模式标本研究，确认 *Lyristes wui* Schmidt, 1932 为 *Salvazana mirabilis* Distant, 1913 的次异名，*Lyristes altaiensis* Schmidt, 1932 为分布于北美的 *Neotibicen resh* (Haldeman, 1852) 的次异名。*Lyristes altaiensis* 分布于中国新疆阿尔泰的记录可能源于对其正模标签信息的错误解读。

关键词：新异名；丽蝉属；蟟属；新蟟属；鉴定；地理分布

Introduction

Schmidt (1932) described and enumerated the Chinese Cicadidae, and listed the following 6 species under the genus *Lyristes* Horváth: *L. altaiensis* Schmidt, 1932, *L. flammatus* (Distant, 1892), *L. leechi* (Distant, 1890), *L. pekinensis* (Haupt, 1924), *L. sinensis* (Distant, 1890) (= *L. atrofasciatus* (Kirkaldy, 1909)) and *L. wui* Schmidt, 1932.

In our study, based on comparison of the type specimens of *L. wui* and *L. altaiensi* and other related materials, we recognized the former is a new synonym of *Salvazana mirabilis* Distant, 1913, and the latter is a new synonym of a North American species, *Neotibicen resh* (Haldeman, 1852). Therefore, *Lyristes altaiensis* and *Lyristes wui* should be excluded from East Asian *Lyristes*.

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Material and methods

The holotypes of *L. wui* and *L. altaiensis*, deposited in the Zoological Museum, Polish Academy of Sciences, Warszawa (MIZ), were borrowed for morphological investigation. External morphology was observed using an Olympus SZX10 stereomicroscope and Nikon SMZ1500 binocular (Nikon Corporation, Tokyo, Japan). The habitus and male genitalia were photographed using a Canon 50D with a 65 mm macro lens. Terminology for morphological features follows Moulds (2005, 2012).

Taxonomy

1. ***Salvazana mirabilis*** **Distant, 1913** (Figs. 1, 2)

Salvazana mirabilis Distant, 1913: 286.
Salvazana imperialis Distant, 1918: 197.
Pulchrocicada sinensis He, 1984: 221.
Pulchrocicada guangxiensis He, 1984: 223.
Lyristes wui Schmidt, 1932: 119. **syn. nov.**

Remarks. After examining the holotype male of *Lyristes wui* (Fig. 1), we confirm that *L. wui* is not a synonym of *L. jai* (Ouchi, 1938) as erroneously synonymized by Chou *et al.* (1997), but a junior synonym of the red hind wing type (color pattern I; coloration of the "*imperialis*" type) of *Salvazana mirabilis* Distant, 1913 (Fig. 2). The type locality of *L. wui*, Kwangsi, is "Guangxi" Province, same as the distribution of *Salvazana mirabilis* Distant, 1913 in China.

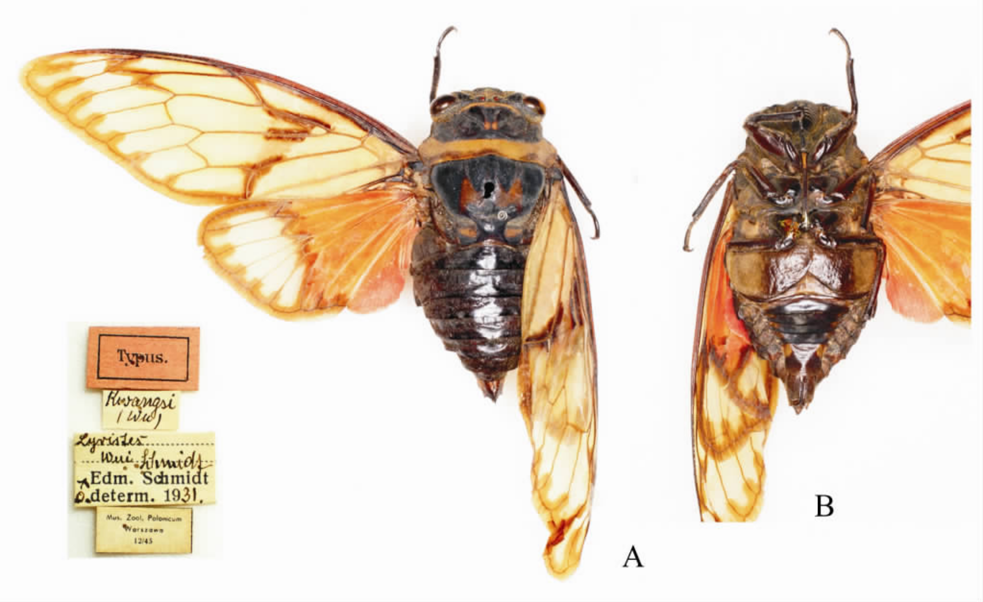

Figure 1. *Lyristes wui* Schmidt. Habitus (male, holotype; body length 39 mm). A. Dorsal view; B. Ventral view.

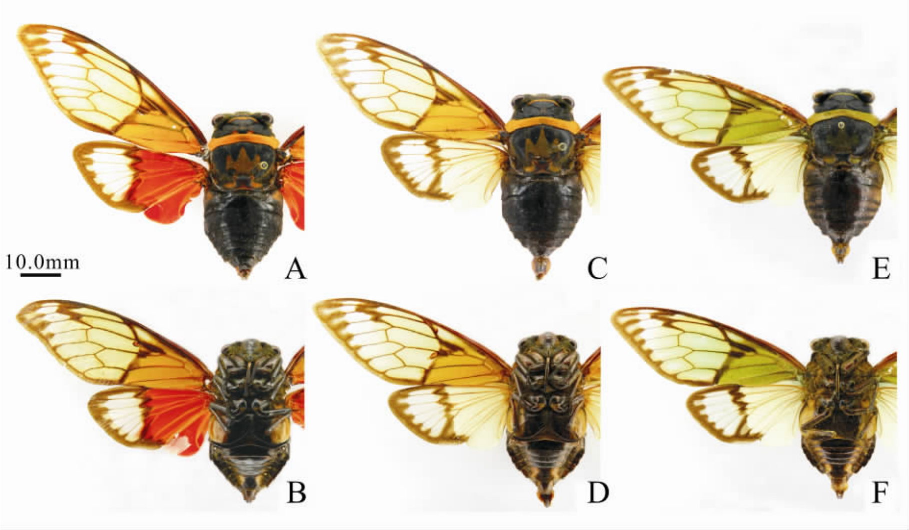

Figure 2. *Salvazana mirabilis* Distant. Habitus A, B. Color pattern I, dorsal and ventral views; C, D. Color pattern II, dorsal and ventral views; E, F. Color pattern III, dorsal and ventral views.

2. ***Neotibicen resh* (Haldeman, 1852)** (Fig. 3)

Neotibicen resh, Hill & Moulds (in Hill *et al*., 2015): 227.

Tibicen resh Haldeman, 1852: 366.

Lyristes altaiensis Schmidt, 1932: 119. **syn. nov.**

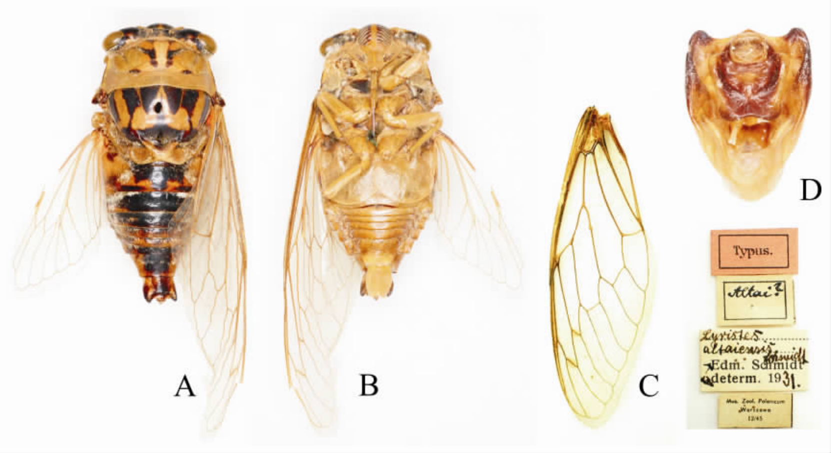

Figure 3. *Lyristes altaiensis* Schmidt, 1932 (male, holotype; body length 36 mm). A. Habitus, dorsal view; B. Habitus, ventral view; C. Fore wing; D. Male pygofer, ventral view.

Remarks. Schmidt (1932) included *Lyristes altaiensis* in his checklist when studying the Chinese Cicadidae. The holotype of *L. altaiensis*, preserved in MIZ, bears a locality label “Altai?” (*see* Fig. 3). However, *L. altaiensis* shows morphological similarities to *Neotibicen resh* (Haldeman, 1852), in particular in male genitalia, i.e., having caudally widened pygofer with much wider uncus lobe. The North American species *Neotibicen resh* may be heterologous with the E. Asian *Lyristes* (the genus name “*Lyristes*” has never been used in

America). *Lyristes altaiensis* may have been erroneously recorded from China due to the mislabeling of the specimen. Herein, we treat *Lyristes altaiensis* Schmidt, 1932 as a junior synonym of *Neotibicen resh* (Haldeman, 1852).

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